

WHAT IS CLAIMED IS:

1. A double-pipe heat exchanger comprising an inner pipe and an outer pipe, wherein said outer pipe is dented from its outside toward its inside, thereby forming a plurality of projections on the inner side of said outer pipe.
2. The double-pipe heat exchanger according to claim 1, wherein said projection is formed into substantially conical shape, substantially truncated shape, substantially spherical surface shape, substantially cylindrical shape, or substantially elliptic cylindrical shape.
3. The double-pipe heat exchanger according to claim 1, wherein the plurality of projections are disposed in a zigzag manner.
4. The double-pipe heat exchanger according to claim 1, wherein the plurality of projections are disposed helically.
5. The double-pipe heat exchanger according to claim 1, wherein a refrigerant passage is formed in said inner pipe, and a water passage is formed between said inner pipe and said outer pipe.
6. The double-pipe heat exchanger according to claim 5, wherein said inner pipe is a leakage detecting pipe.
7. The double-pipe heat exchanger according to claim 5, wherein carbon dioxide is used as the refrigerant.

8. The double-pipe heat exchanger according to claim 5, wherein the refrigerant and water flow in opposite directions from each other.

9. The double-pipe heat exchanger according to any one of claims 5 to 8, wherein the number of said projections disposed on an exit side of the water is smaller than the number of said projections disposed on an entrance side of the water.

10. The double-pipe heat exchanger according to any one of claims 5 to 8, wherein the depth of the projections disposed on an exit side of the water is shallower than the depth of the projections disposed on an entrance side of the water.

11. The double-pipe heat exchanger according to any one of claims 5 to 8, wherein said projections are not disposed on an exit side of the water.